



Hydronic Heating Standby Optimization

What is this Technology?

Hydronic boilers heat fluid that is then circulated throughout a building to provide heat. In “standby” mode, these boilers often cycle on as a result of the fluid losing heat to its surroundings, rather than in response to genuine demand for additional space heating. Using sensors to measure the temperature of fluid as it leaves the boiler and again when it returns, this hydronic heating standby optimization technology distinguishes natural heat loss from system demand to effectively reduce the number of times the boiler fires each day, thus conserving energy without compromising occupant comfort. The technology is simple, installation is fast, and the system is compatible with building automation systems.

Why is GSA Interested?

GSA spends \$15 million on heating each year. A significant portion of that heat is provided by hydronic boilers. By eliminating needless standby cycling in hydronic systems, this technology minimizes boiler run time and can save between 10% and 25% of heating energy consumption.



ENERGY EFFICIENCY The manufacturer estimates at least 10% heating savings for non-condensing boilers and at least 7% savings for condensing boilers. The greatest savings should be experienced during shoulder months.



COST-EFFECTIVENESS Payback is estimated to be less than three years.



OPERATIONS & MAINTENANCE The technology is maintenance free. By reducing boiler cycling the technology reduces mechanical wear and tear and has the potential to extend boiler life.



DEPLOYMENT POTENTIAL The technology is retrofit-friendly and broadly applicable to hydronic heating systems across the portfolio.

The Green Proving Ground program, in association with a federal laboratory, is subjecting hydronic heating standby optimization to real-world measurement and verification in GSA buildings. Results will be published on the GPG website, www.gsa.gov/gpg.



The Green Proving Ground program leverages GSA's real estate portfolio to test innovative building technologies. The program helps GSA meet its sustainability goals by providing actionable data that informs investment decisions targeted at energy-use reduction.